

Final Exam

406.306 Management Information Systems

Spring, 2007

Date: June 5, 2007

YOUR NAME:

1. True / False Questions (2 points each)

1-1. Forward aggregators favor buyers by bringing them together and negotiating for them under an aggregation mechanism. F

1-2. MRO supplies are usual candidates for automated purchasing process in e-Procurement systems. T

1-3. In case of the class C products in Pareto analysis, the costs of the buying process are often higher than those of the goods and services purchased. T

1-4. The buyer-centric e-procurement model usually requires very high investment for suppliers to participate. F

1-5. Among the buyer-centric, seller-centric, and e-marketplace e-procurement models, the buyer-centric solutions are usually least expensive, in terms of overall costs from the combined perspective of buyers and sellers. F

1-6. Thick e-business networks necessarily tightly coupled. F

1-7. Inter-organizational interoperability is more difficult to achieve than intra-organizational interoperability due to the lack of central authority. T

1-8. The richer the information to be exchanged among the participants in e-Business network, the more limited the reach. T

1-9. TIH (Threatened Intermediaries Hypothesis) is now widely accepted as truth among e-Business researchers. F

1-10. Building a UMM-compliant business model is a bottom-up modeling activity. F

1-11. In store-and-forward messaging, the same application can be sender, receiver, or both. T

1-12. Asynchronous messaging is in general preferred to synchronous messaging in e-Business. T

1-13. RPC is not a good choice for integrating enterprise wide applications where high performance and high reliability are required. T

1-14. JMS itself is a messaging system. F

1-15. Compared to the hub and spoke EAI model, the shared bus EAI model is more scalable. T

2. (10 points) What are the major functional differences between integration broker and message-oriented middleware?

in addition to the functionality provided by MOM, integration broker provides message transformation, content-based routing, ...

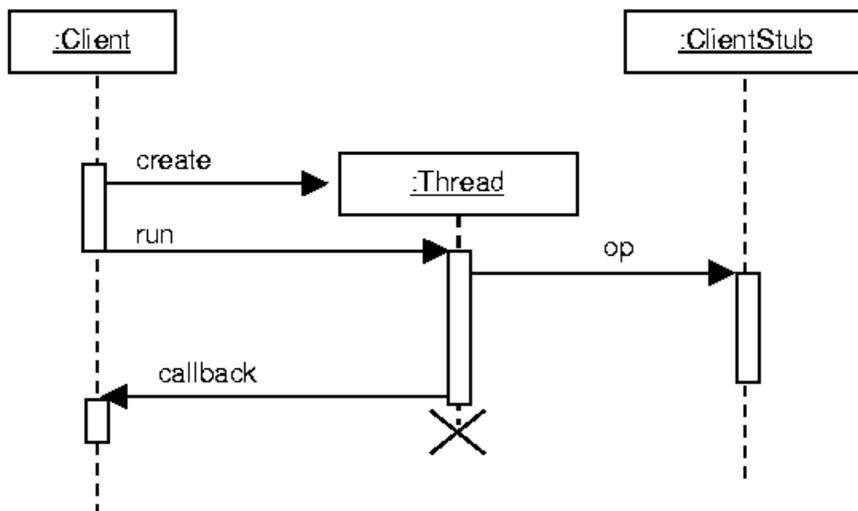
3. (15 points) Consider a situation where n different companies interoperate each other via a MOM system. Assuming that each company has its own proprietary enterprise application, discuss potential problems when (1) there is no trusted coordinating company, (2) n becomes very large, and finally (3) n changes quite frequently.

(1) No obvious place where to put the message broker for the global workflow

(2) The number of adapters (or translators) required is $n(n-1)$ in the worst case -> grows quite fast!

(3) Frequent updates of the message broker will necessarily lead to the frequent unavailability of the entire system. Furthermore, introducing a new enterprise application to the existing MOM system of size n will require the creation of $2(n-1)$ new adapters (or translators).

4. (10 points) RMI does not define asynchronous requests, but Java supports multi-threading. Show how multi-threading can be used for the implementation of asynchronous Java-based RMI.



5. (10 points) Compare the WfMS, EAI, and BPMS in terms of their problem scopes they can address.

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6. (10 points) What kinds of problems arise when long-running transactions are executed in application server based BPI that only supports synchronous communication? Why?

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7. (15 points) Briefly model the following *flow control logic* in UML activity diagram: A brokering web service, named “ReserveFlight” is initiated by receiving itinerary details such as date, time, and destination. It then invokes two web services, namely “ReserveKAL” and “ReserveAsiana”, *in parallel* to obtain the availability and price information from Korean Air and Asiana respectively. “ReserveFlight” responds to the client with the reservation information as soon as it becomes available: That is, it does not

wait until all the responses from both companies are received. The client application, when it first receives the reservation information from “ReserveFlight”, may (i) confirm the reservation immediately, (ii) wait for another reservation result, and confirm its selected flight, or (iii) wait for another reservation result, and request cancellation for both.